

Amendments to the Claims

This listing of claims will replace all prior versions and listing of claims in this application. Please amend the claims, as follows:

Listing of claims:

We Claim:

1. (Previously Presented) A method for preparing asphalt and polymer compositions comprising:

heating a mixture consisting essentially of asphalt and an elastomeric polymer;

and

adding from about 0.05 wt% up to 5 weight % of a metal salt based on the weight of the asphalt/polymer mixture, where the metal of the metal salt is selected from the group consisting essentially of zinc, cadmium, mercury, copper, silver, nickel, platinum, iron, magnesium, and mixtures thereof; and

where the compatibility of the asphalt and polymer composition is improved as compared with the compatibility of an identical asphalt and polymer composition having a lesser metal salt amount.

2. (Previously Presented) The method of claim 1 where the metal salt is a metal oxide.

3. (Original) The method of claim 1 where the metal salt is a metal oxide selected from the group consisting of zinc oxide, calcium oxide and combinations thereof.

4. (Cancelled).

5. (Cancelled).

6. (Previously Presented) The method of claim 1 further comprising adding a crosslinker to the mixture.

7. (Previously Presented) The method of claim 6 where in adding the crosslinker, the crosslinker is selected from the group consisting essentially of elemental sulfur, mercaptobenzothiazole (MBT), thiurams, mercaptobenzimidazole, and mixtures thereof.
8. (Original) The method of claim 6 where the metal salt proportion is at least about five times greater than the crosslinker proportion.
9. (Original) The method of claim 6 where the crosslinker is present in an amount ranging from about 0.01 to 0.4 wt%, based on the weight of the asphalt/polymer mixture.
10. (Original) The method of claim 1 further comprising adding ground tire rubber (GTR) to the mixture of asphalt and an elastomeric polymer.
11. (Previously Presented) The method of claim 10 where the GTR ranges from about 1 to about 20 wt% of the mixture.
12. (Cancelled).
13. (Previously Presented) The method of claim 10 where the GTR and mixture of asphalt and an elastomeric polymer is more homogeneous as compared to an identical mixture of GTR, asphalt and elastomeric polymer having a lesser amount of metal salt.
14. (Original) The method of claim 1 where the asphalt and polymer compositions have reduced gel.
15. (Previously Presented) A method of road building comprising combining the asphalt and polymer compositions made by the method of claim 1 with an aggregate to form a road paving material, and using the material to form road pavement.

16. (Previously Presented) A method of sealing a roof comprising heating the asphalt and polymer compositions made by the method of claim 1 and distributing it over at least a portion of a roof surface.
17. (Previously Presented) A method for preparing asphalt and polymer compositions comprising:
heating a mixture consisting essentially of asphalt and an elastomeric polymer;
adding a metal oxide, where the metal oxide is selected from the group consisting essentially of zinc oxide, iron oxide, copper oxide, magnesium oxide calcium oxide and combinations thereof, and where the metal oxide is added in an amount at least from about 0.05 wt% up to 5 wt % based on the weight of the asphalt/polymer mixture; and
where the compatibility of the asphalt and polymer composition is improved as compared with the compatibility of an identical asphalt and polymer composition having a lesser metal oxide amount.
18. (Previously Presented) The method of claim 17 where the metal oxide is zinc oxide.
19. (Previously Presented) The method of claim 17 further comprising adding a crosslinker to the mixture.
20. (Previously Presented) The method of claim 19 where in adding the crosslinker, the crosslinker is selected from the group consisting of elemental sulfur, mercaptobenzothiazole (MBT), thiurams, mercaptobenzimidazole, and mixtures thereof.
21. (Cancelled).
22. (Cancelled).

23. (Previously Presented) A method for preparing asphalt and polymer compositions comprising:

heating a mixture consisting essentially of asphalt and an elastomeric polymer;

adding from about 0.05 wt% up to 5 wt% of a metal oxide, where the metal of the metal oxide is selected from Groups IIA and IIB of the Periodic Table (CAS notation);

adding ground tire rubber (GTR) to the mixture of asphalt and elastomeric polymer before or after the metal oxide is added; and

where the GTR and mixture of asphalt and elastomeric polymer is more homogeneous as compared to an identical mixture of GTR, asphalt and elastomeric polymer having a lesser amount of metal oxide.

24. (Previously Presented) The method of claim 23 where the GTR ranges from about 1 to about 20 wt% of the mixture.

25. (Cancelled).

26. (Previously Presented) A polymer modified asphalt (PMA) consisting essentially of:

an asphalt;

an elastomeric polymer; and

an organic or inorganic metal salt present in an amount from about 0.05 wt% up to 5 wt% based on the weight of the asphalt/polymer mixture, where the metal of the metal oxide is selected from the group consisting essentially of zinc, cadmium, mercury, copper, silver, nickel, platinum, iron, magnesium, and mixtures thereof.

27. (Cancelled).

28. (Original) The PMA of claim 26 where the metal salt is a metal oxide selected from the group consisting of zinc oxide, calcium oxide and combinations thereof.

29. (Cancelled).
30. (Previously Presented) The PMA of claim 26 where the compatibility of the PMA is improved as compared with the compatibility of an identical PMA having a lesser metal salt amount.
31. (Previously Presented) The PMA of claim 26 further consisting of a crosslinker.
32. (Previously Presented) The PMA of claim 31 where the crosslinker is selected from the group consisting of elemental sulfur, mercaptobenzothiazole (MBT), thiurams, mercaptobenzimidazole, and mixtures thereof.
33. (Cancelled).
34. (Cancelled).
35. (Previously Presented) The PMA of claim 26 further consisting of ground tire rubber (GTR).
36. (Previously Presented) The PMA of claim 35 where the GTR ranges from about 1 to about 20 wt% of the PMA.
37. (Currently Amended) The PMA of claim 35 where the metal salt is zinc oxide. |
38. (Cancelled).
39. (Previously Presented) The PMA of claim 35 where the mixture of GTR and PMA is more homogeneous as compared to an identical mixture of GTR and PMA having a lesser amount of metal salt.
40. (Original) The PMA of claim 26 where the PMA has reduced gel.

41. (Original) A road made from the PMA of claim 26 and aggregate.
42. (Original) A roof sealed with the PMA of claim 26.
43. (Previously Presented) A polymer modified asphalt (PMA) consisting essentially of:
asphalt;
an elastomeric polymer;
a metal oxide present in an amount at least from about 0.05 wt% up to 5 wt% based on the weight of the asphalt/polymer mixture, where the metal oxide is selected from the group consisting essentially of zinc oxide, calcium oxide and combinations thereof; and
where the compatibility of the asphalt and polymer composition is improved as compared with the compatibility of an identical asphalt and polymer composition having a lesser metal oxide amount.
44. (Original) The PMA of claim 43 where the metal oxide is zinc oxide and the zinc oxide is present in an amount ranging from about 0.05 to about 2 wt.% based on the combined amount of asphalt and elastomeric polymer.
45. (Previously Presented) The PMA of claim 43 further consisting of a crosslinker.
46. (Previously Presented) The PMA of claim 45 where the crosslinker is selected from the group consisting of elemental sulfur, mercaptobenzothiazole (MBT), thiurams, mercaptobenzimidazole, and mixtures thereof.
47. (Original) The PMA of claim 45 where the metal oxide proportion is at least about five times greater than the crosslinker proportion.
48. (Cancelled).

49. (Currently Amended) A polymer modified asphalt (PMA) consisting essentially of:

a mixture of asphalt and an elastomeric polymer;

a metal oxide in an amount at least 0.05 wt% up to 5 wt% based on the weight of the asphalt/polymer mixture, where the metal of the metal oxide is selected from Groups IIA and IIB of the Periodic Table (CAS notation), and where the elastomeric polymer is ground tire rubber (GTR); and

where the GTR and mixture of asphalt and an elastomeric polymer is more homogeneous as compared to an identical mixture of GTR, asphalt and elastomeric polymer having a lesser amount of metal oxide.

50. (Previously Presented) The PMA of claim 49 where the GTR ranges from about 1 to about 20 wt% of the mixture.

51. (Cancelled).